The GAPS Experiment: A Search for Dark Matter Using Low Energy Antiprotons and Antideuterons [UCLA Co-I]

Completed Technology Project (2017 - 2021)

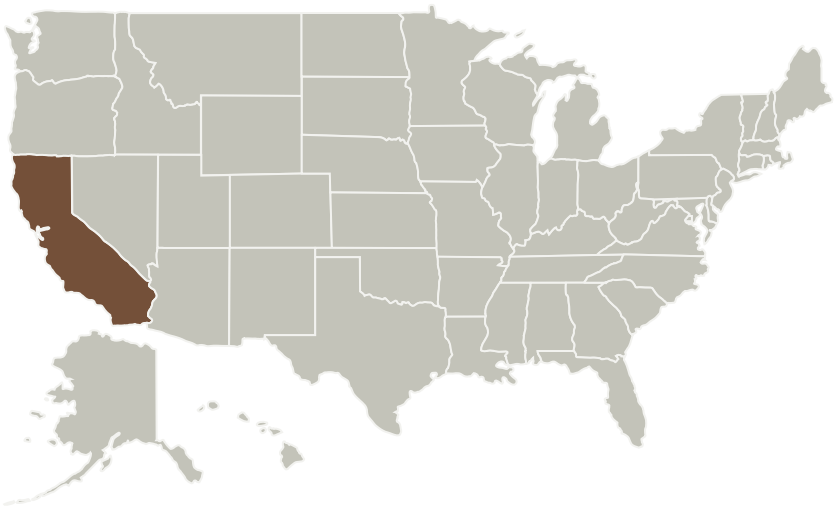
Project Introduction

This is a Co-I proposal in support of the PI lead proposal entitled "The GAPS Experiment: A Search for Dark Matter Using Low Energy Antiprotons and Antideuterons" submitted by Prof. Charles Hailey, Columbia University. Our proposed program would support the UCLA tasks on the GAPS experiment as detailed in our task statement. The primary focus of this work is on the development, construction and testing of the time-of-flight (TOF) system, the master GAPS trigger and support of the simulation and analysis tasks.

Anticipated Benefits

The Astrophysics Research and Analysis program (APRA) supports suborbital and suborbital-class investigations, development of detectors and supporting technology, laboratory astrophysics, and limited ground-based observing. Basic research proposals in these areas are solicited for investigations that are relevant to NASA's programs in astronomy and astrophysics, including the entire range of photons, gravitational waves, and particle astrophysics. The emphasis of this solicitation is on technologies and investigations that advance NASA astrophysics missions and goals.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
University of Southern California(USC)	Lead Organization	Academia Asian American Native American Pacific Islander (AANAPISI)	Los Angeles, California
University of California-Los Angeles(UCLA)	Supporting Organization	Academia	Los Angeles, California

Primary U.S. Work Locations
California

Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Lead Organization:

University of Southern California (USC)

Responsible Program:

Astrophysics Research and Analysis

Project Management

Program Director:

Michael A Garcia

Program Manager:

Dominic J Benford

Principal Investigator:

Rene A Ong

Co-Investigators:

Evan R Garcia
Jeffrey A Zweerink

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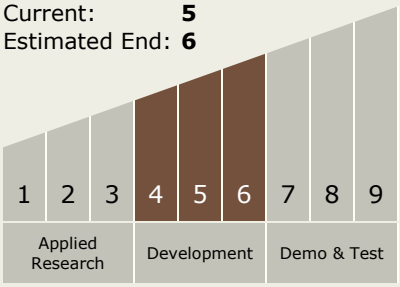
Technology Maturity (TRL)

Start: **4**
Current: **5**
Estimated End: **6**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors

Target Destination

Outside the Solar System